DUMFRIES & GALLOWAY SHORELINE MANAGEMENT PLAN

SEA Statement

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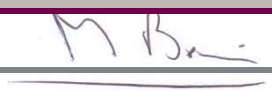
Dr Malcolm Brian		21 April 2023

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Contents

Tables

Figures

Appendices

1 INTRODUCTION

1.1 Purpose of this Report

This Strategic Environmental Assessment (SEA) Statement has been prepared as part of the SEA for the Dumfries and Galloway Shoreline Management Plan (SMP). This document provides information on the decision-making process and further details the ways in which environmental considerations, the views of consultees, the recommendations of the SEA Environmental Report and the Habitats Regulations Appraisal (HRA) have influenced, and been taken into account by, the SMP.

The SEA of the SMP has been developed on behalf of Dumfries and Galloway Council. The SMP aims to provide guidance to operating authorities and regulatory bodies as to future sustainable flood and coastal erosion risk management; essentially providing an agreed high-level approach, intent, and framework for management. It establishes a robust, evidence-based and sustainable long-term approach for managing the risk of coastal flooding and erosion along the Dumfries and Galloway coast. This will help to develop an understanding of coastal issues and identify where further work may be required to mitigate against coastal flooding or erosion by highlighting constraints and opportunities for sustainable use of the coastal zone. The SMP provides guidance to manage coastal erosion and flooding in the short, medium and long term over the next 100 years.

This SEA Statement has been prepared in accordance with the European Communities Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive) and in accordance with the Environmental Assessment (Scotland) Act 2005.

As specified by Section 18(3) of the Environmental Assessment (Scotland) Act, this SEA Statement summarises the following information:

a) How environmental considerations have been integrated into the plan or programme (**Section 2**);

b) How the environmental report has been taken into account (**Section 3**);

c) How the opinions expressed in response to the invitations mentioned in section 16 have been taken into account (**Section 4**);

d) How the results of any relevant consultation under regulation 14 of the Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633) have been taken into account (**Section 4**);

e) The reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives considered (**Section 5**); and

f) The measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme (**Section 6**).

2 HOW ENVIRONMENTAL CONSIDERATIONS HAVE BEEN INTEGRATED INTO THE PLAN

2.1 Introduction

The Environmental Assessment (Scotland) Act requires that certain Plans and Programmes, prepared by statutory bodies, which are likely to have a significant impact on the environment, are subject to the SEA process. SEA legislation and guidance recommends that Plan preparation, SEA and HRA should be integrated and prepared in an iterative manner, in order to facilitate the ongoing assessment and evaluation of environmental considerations during preparation of the Plan. The SEA process is broadly comprised of the stages shown in **Figure 2-1**, which are summarised in **Table 2-1**.

The SEA and HRA assessment processes have been developed and undertaken integrally with the development and assessment of the SMP policies. This section presents a summary of how environmental considerations have informed the SMP preparation process.

Table 2-1 Summary Description of the Main Stages in the SEA Process

Stage	Description	Status
Screening	Determines whether SEA is required for a Plan / Programme, in consultation with the designated statutory consultees.	Completed September 2019
Scoping	Determines the scope and level of assessment detail for the SEA, in consultation with the designated statutory consultees.	Completed March 2020
Environmental Assessment	Formal and transparent assessment of the likely significant impacts on the environment arising from implementation of the Plan / Programme, including all reasonable alternatives. The output from this is an Environmental Report which must go on public display along with the draft Plan.	Completed April 2022
SEA Statement	Summarises the process undertaken and identifies the manner in which environmental considerations and consultations have been integrated into the final Plan / Programme.	Current Stage

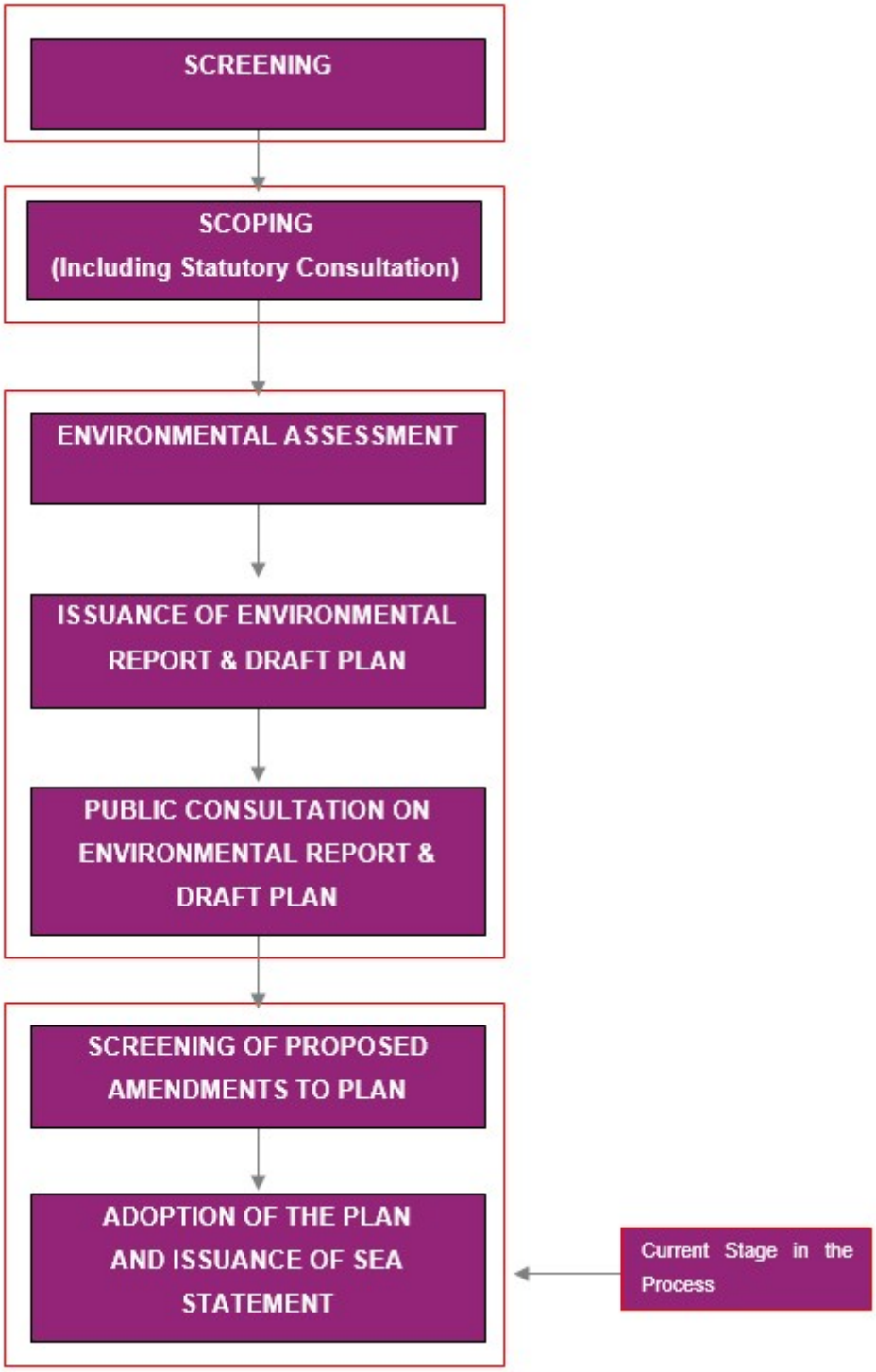

Figure 2-1 Overview of SEA Process

2.2 SEA Screening

On behalf of Dumfries and Galloway Council, RPS carried out an SEA Screening for the SMP in September 2019. The Screening Report established the following about the draft SMP:

- Dumfries and Galloway Council is the Responsible Authority for the development and implementation of the SMP.

- The Responsible Authority determined that the SMP required an SEA, as the likelihood existed for significant environmental effects to arise as a result of the Plan. The Plan falls within Section 5(3) of the Environmental Assessment (Scotland) Act 2005.
- The Responsible Authority has identified that the SMP sets the framework for future shoreline works along the Dumfries and Galloway coast, that there is the potential for significant impacts as a result of the scale and duration of effects and that sensitive receptors along the Dumfries and Galloway coast include SACs, SPAs, SSSIs and LNRs.

The SEA Screening Determination was advertised on the Dumfries and Galloway Council website. It was also provided to the environmental consultees in September 2019. Responses to the SEA Screening were received from the Scottish Environment Protection Agency (SEPA), Scottish Government, Scottish Natural Heritage (SNH; now NatureScot) and Historic Environment Scotland (HES) and were taken into account in the preparation of the SEA Environmental Report.

2.3 SEA Scoping

The SEA scoping for the draft SMP took place from October 2019 to March 2020. A SEA Scoping Report was produced as part of the scoping phase of the SEA for the draft SMP. The purpose of the Scoping Report was to provide sufficient information on the SMP to enable the consultees to form an opinion on the appropriateness of the scope, format, level of detail, methodology for assessment and consultation period proposed for the SEA Environmental Report. The SEA Scoping Report for the Plan was circulated to the following statutory consultees:

- SEPA
- SNH (now NatureScot)
- HES

Owing to the potential for effects on European protected sites in England to arise from implementation of the draft SMP, the transboundary consultee Natural England was also provided with the SEA Scoping Report.

The Scoping Report was also made publicly available via the Dumfries and Galloway Council website. The issuing of a draft Scoping Report to consultees is good practice and can inform stakeholders about the key environmental issues and the key elements of the Plan. In addition, the Scoping Report is a tool to generate comments from stakeholders on the scope and approach of the SEA. The responses received in relation to the Scoping for this SEA were taken into account in the preparation of the SEA Environmental Report.

2.4 SEA Environmental Report

A SEA Environmental Report was completed that detailed the environmental assessments undertaken on the draft SMP. The preparation of the Environmental Report on the likely significant effects on the environment of the Plan included consideration of:

- Baseline data relating to the current state of the environment;
- Links between the draft SMP and other relevant Strategies, Policies, Plans, Programmes and Environmental Protection Objectives;
- Key environmental issues in the area of the draft SMP;
- Alternatives available;
- The likely significant positive and negative effects of a number of reasonable alternatives on the environment;
- Measures envisaged for the prevention, reduction and mitigation of any significant adverse effects; and
- Monitoring measures to ensure that positive and negative environmental effects of the SMP will be identified, allowing for appropriate remedial action to be taken if necessary.

2.5 Consultations

Environmental factors have been considered during the development of the draft SMP and the supporting environmental assessments. The SEA Screening Report was produced in September 2019 and was sent to SEPA, SNH (now NatureScot), Scottish Government and HES as the statutory consultees in Scotland. Consultee responses to this SEA screening can be found in Appendix A of the SEA Environmental Report.

A SEA Scoping Report for the draft SMP was circulated in March 2020 to SEPA, SNH (now NatureScot) and HES. Owing to the potential for transboundary effects in England to arise from implementation of the draft SMP, the transboundary consultee Natural England was also provided with the SEA Scoping Report. The SEA Scoping report was added to the Dumfries and Galloway Council website and emails were sent to all stakeholders to inform them that the information was available for review and comment. Responses to the SEA Scoping Report were received from the following bodies:

- Historic Environment Scotland
- Scottish Environmental Protection Agency
- Scottish Natural Heritage (now Nature Scot)
- Natural England
- Solway Firth Partnership

Consultee responses to the SEA Scoping Report can be found in Appendix B of the SEA Environmental Report. All responses received from the consultation process were incorporated into the Environmental assessments, where feasible and appropriate.

Consultations on the draft SMP, SEA Environmental Report and HRA Record commenced on 17th June 2022 and ran for a 3-month period until 16th September 2022. The draft SMP, SEA Environmental Report and HRA report were made available digitally via the Dumfries and Galloway Council website – https://www.dumgal.gov.uk/SMP. All responses received during this consultation phase, and any subsequent action taken, are summarised in **Section 4**, and further detailed in **Appendix A** of this SEA Statement.

In addition, it should be noted that stakeholder and public engagement was central to the development of the SMP (and SEA). Stakeholders were engaged with at each stage of the SMP development and through this process stakeholders and communities were able to inform and contribute to the development of the SMP policy recommendations. The main stakeholder groups engaged with were identified in an Engagement Plan at the outset of the SMP development, as detailed in Chapter 2 of the SMP. These included the following:

- Client Steering Forum (CSF), this included the Scottish Environment Protection Agency, NatureScot, Marine Scotland, Solway Firth Partnership, Solway Marine Information, Learning and Environment (SMILE) and Dumfries and Galloway Council (Development Planning & Environment).
- Elected Members Forum (EMF), open to all local elected members of Dumfries and Galloway Council, MP's and MSP's.
- Key Stakeholder Forum (KSF), comprising key influential stakeholders including Community Councils, Community groups, State agencies and bodies, Academics, Utilities bodies and the Ministry of Defence (MoD).
- Public Stakeholder Group, this group was open to all people living within the vicinity of, or with an interest in the Dumfries and Galloway coast.

During the initial stages of the SMP update the engagement with the above listed groups was accomplished via a series of face-to-face meetings and events. At the baseline data collection stage public consultation and engagement events were held in Port Logan, Kirkcudbright, Kirkbean and Annan, however, the Covid-19 pandemic restrictions prevented face-to-face consultation at the preferred policy stage. This led to the development and application of a digital approach for the engagement, involving a Virtual Consultation Room and a series of virtual events as a forum to engage with the above listed groups. A combination of 'face-to-face' events, and virtual consultation was undertaken during the presentation of the 'Action Plan'.

2.6 Habitats Regulations Appraisal

In addition to the SEA process, and in accordance with the Conservation (Natural Habitats, &c.) Regulations 1994, as amended (the 'Habitats Regulations'), the potential for the draft SMP to impact negatively on European sites (previously referred to as Natura 2000 sites prior to the UK's exit from the European Union), including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites, was assessed. Regulation 48 of the Habitats Regulations requires that:

"*A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which is likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects), and is not directly connected with or necessary to the management of the site, shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives*".

A Habitats Regulations Appraisal (HRA) of the draft SMP was undertaken in parallel with the SEA process, and the findings of the HRA Record were integrated into the SEA Environmental Report.

2.7 SEA Statement

The main purpose of this SEA Statement is to provide information on the decision-making process for the SMP in order to illustrate how decisions were taken and used to make the development process more transparent. In doing so, the SEA Statement documents how the recommendations of both the SEA Environmental Report and the HRA Record, as well as the views of the statutory consultees and other submissions received during consultation, have influenced the preparation of the SMP. It further provides information on the arrangements put in place for monitoring the implementation of the SMP following its finalisation. The SEA Statement is available to the public, along with the adopted SMP.

2.8 Adoption of the SMP

Following the public and statutory consultation on the draft SMP and associated environmental reports, the final SMP was provided to Dumfries and Galloway Council for approval. The final SMP was adopted on 28th April 2023. This, along with the SEA Environmental Report and SEA Statement will be used for the purpose of informing further studies and the detailed planning and design of the proposed policies and actions contained within the SMP.

3 HOW THE ENVIRONMENTAL REPORT HAS BEEN TAKEN INTO ACCOUNT IN THE PLAN

3.1 Environmental Assessment of the draft SMP Policies

The proposed measures of the SMP were assessed in terms of their potential positive and negative effects, and the significance of these effects on the environment against the SEA objectives. The purpose of this was to predict and evaluate, as far as possible, the environmental effects of the Plan, highlighting any significant environmental problems and / or benefits that are likely to arise from its implementation. Where possible, this assessment was quantitative, to aid understanding of the implications of each proposed measure in the Plan.

The approach used for assessing the draft SMP was a Baseline Led Assessment. This method involved the assessment of each option available in the enactment of the SMP against each of the following headings / subjects:

- Biodiversity, Flora and Fauna (BFF)
- Population and Human Health (PHH)
- Geology, Soils and Land Use (GSL)
- Water (W)
- Climatic Factors (CF)
- Material Assets and Infrastructure (MA)
- Cultural, Architectural and Archaeological Heritage (CH)
- Landscape and Visual Amenity (L)

The preferred policies outlined in the SMP were assessed in the short, medium and long term for likely effects, the significance of the effects, and whether they were positive or negative effects. Other impacts that were assessed for significance were secondary effects, cumulative effects, synergistic effects, temporary and permanent effects, and the inter-relationship of effects.

The proposed scenarios for consideration were assessed in the SEA against a series of Strategic Environmental Objectives (SEOs) to examine the potential for likely significant environmental effects associated with the SMP. All potential positive and negative effects were presented individually, with a text description. The scores assigned for effects ranged from +3 to -3, as demonstrated in **Table 3-1**. The purpose of adding numerical scores was to assist in the ranking of options and for the potential incorporation of the environmental and social criteria into future decision making, as this can provide for a multi-criteria analysis of alternatives if desired. Options may have both positive and negative effects at the same time and hence were not conveyed in terms of net benefit or net loss, which can sometimes be misleading.

Description	Score
Significant positive environmental effects	+3
Moderate positive environmental effects	+2
Slight positive environmental effects	+1
No environmental effects	0
Slight negative environmental effects	-1
Moderate negative environmental effects	-2
Significant negative environmental effects	-3

Table 3-1 Description of SEA Environmental Effect Scores

3.1.1 SEA Objectives

SMP policy proposals were assessed against a set of strategic environmental objectives (SEOs) in order to examine the likely significant environmental effects of implementing the policy proposals of the draft SMP, and how their implementation could contribute to achieving these SEOs. The SEOs were developed and consulted on with the environmental consultees. This assessment was relatively strategic, with the aim of reporting likely impacts at the coastal cell and sub-cell level to reflect the scale at which the options were being planned. The SEA Objectives, Sub-Objectives, Indicators and Targets used are given in **Table 3-2**.

Table 3-2 Strategic Environmental Objectives, Indicators and Targets

Criteria	Objective		Sub-Objective		Indicators	Minimum Requirement	Aspirational Target
Biodiversity, Flora & Fauna	**1**	Avoid damage to, and where possible enhance, the biodiversity, flora and fauna in the vicinity of the shoreline.	**A**	Avoid detrimental effects to, and where possible enhance, International and European designations for protected species and their key habitats.	Area and condition of SAC, SPA, and Ramsar designation. Numbers of protected species.	No loss of area of, or negative impacts on, International and European sites and protected species.	Potential enhancement of, and increased protection for, International and European sites and protected species.
			B	Avoid damage to or loss of, and where possible enhance, national and local nature conservation sites and protected species, or other known species of conservation concern such as priority marine features.	Area and condition of SSSI, LNR, MCA, MPA and local conservation designations. Numbers of protected species.	No loss of area of, or negative impacts on, national and local conservation sites and species.	Potential enhancement of and increased protection for national and local conservation sites and species.
Population & Human Health	**2**	Protect the public from risk of coastal flooding and erosion and avoid significant social effects on the population.	**A**	Protect the public from risk of coastal flooding and erosion.	Population at risk from coastal flooding and erosion.	No increase in population at risk from coastal flooding and erosion.	No population at risk from coastal flooding and erosion.
			B	Avoid significant negative social effects on the public.	Population displaced by coastal flooding and erosion.	Avoid social effects on a significant proportion of the population or community.	Avoid social effects on the population or community.
Geology, Soils and Landuse	**3**	Avoid damage to, and where possible enhance, areas of geological importance and existing functional soil and land resource.	**A**	Maintain or improve areas of existing functional soil and land resource.	Areas of functional soil and land resource at risk from coastal flooding and erosion.	Minimise the loss of functional soil and land resource.	Improvement of functional soil and land resource.
			B	Avoid damage to or loss of, and where possible enhance, national geological conservation sites.	Areas of Geological SSSI.	No loss of area, or negative impacts on national conservation sites.	Improvement of functional soil and land resource.
Water	**4**	Protect and enhance the state of the water environment.	**A**	Protect and enhance the state of the water environment.	Coastal morphology and waterbody status.	No deterioration of status of coastal and transitional waterbodies.	Contribute to the improvement of status of coastal and transitional waterbodies.
Climatic Factors	**5**	Adaptation to potential climatic change.	**A**	Adaptation of shoreline management to potential climatic change.	Interaction with potential climate change influenced flood extents / wave	SMP actions to demonstrate adaptability to climatic change.	SMP actions to be planned for climatic change.

Criteria	Objective		Sub-Objective		Indicators	Minimum Requirement	Aspirational Target
					overtopping and severe weather events.		
Material Assets & Infrastructure	**6**	Protect material assets and infrastructure from risk of coastal flooding and erosion.	**A**	Protect material assets and infrastructure from risk of coastal flooding and erosion.	Material assets and infrastructure at risk from coastal flooding and erosion.	No increase in material assets and infrastructure at risk from coastal flooding and erosion.	No material assets and infrastructure at risk from coastal flooding and erosion.
Cultural, Architectural & Archaeological Heritage	**7**	Protect or, where appropriate, enhance historic environment features and their settings.	**A**	Avoid loss of, or damage to, heritage features.	International, National and local designated heritage structures, sites and monuments.	No loss or damage to heritage features, or their setting, from construction and operation of proposed measures.	Increased protection / preservation for heritage features and /or improvement of setting.
			B	Minimise effects on the setting of heritage features.			
Landscape & Visual Amenity	**8**	Protect, and where possible enhance, the landscape and seascape character and visual amenity of the Dumfries & Galloway shoreline.	**A**	Protect, and where possible enhance, the landscape and seascape character and visual amenity of the Dumfries & Galloway shoreline.	Landscape character assessments. Seascape assessments. Designated landscapes and views, such as NSAs	No negative impacts on landscape quality and amenity of the Dumfries & Galloway shoreline.	Enhancement of the landscape and visual amenity of the Dumfries & Galloway shoreline.

3.2 Recommended mitigation

Following the environmental assessment of the draft SMP, environmental mitigation measures were recommended in order to avoid or minimise any identified potential negative effects of implementing the SMP. The mitigation proposed was broken down into 'General', 'Mitigation by Environmental Effect' and 'HRA Mitigation', as outlined below. These measures were detailed in Section 7.1 of the SEA Environmental Report.

The proposed plan-level mitigation measures by potential environmental effect and HRA-specific plan-level mitigation measures, were listed in Appendix F of the SMP, and Section 6.4 of the SMP states that these measures should be implemented and further developed at the detailed design stage and project level study stage.

3.2.1 General Mitigation

The principal mitigation recommendation is that the predicted negative effects should be considered further during the next stage of policy development, when details of the physical shoreline management measures (e.g., visual appearance and alignment of any hard engineering works) can be optimised through detailed feasibility studies and design in order to limit identified impacts on sensitive receptors. Where feasible, natural flood management and soft / green engineering methods should be incorporated into the detailed planning to reduce the negative environmental impacts of a scheme.

Further environmental studies based on the detailed design and construction methodology should be undertaken as appropriate. These studies may involve, but are not limited to, marine, aquatic and terrestrial ecology surveys, ornithological and bat surveys, fish surveys, landscape and visual assessments, WFD assessments, geotechnical investigations and heritage surveys. Further Appropriate Assessment, to meet the requirements of the Habitats Directive, of the detailed design and construction methodology for implementing the preferred policy will be required at the project level, where potential impacts have been identified in the SEA Environmental Report and accompanying HRA Record for the SMP.

Before any works are carried out, detailed method statements and management plans (construction and environmental) should be prepared, to provide information on timing of works, the specific mitigation measures to be employed for each works area, and mechanisms for ensuring compliance with environmental legislation and statutory consents.

The timing of construction and maintenance works should be planned to avoid any potential for negative cumulative effects or inter-relationships with other schemes, plans or projects, yet should look to optimise any potential positive cumulative effects or inter-relationships.

Contractors should be required to prepare Construction Environmental Management Plans (CEMPs), which would include a requirement for related plans to be prepared, as appropriate, for project implementation, such as Erosion and Sediment Control, Invasive Species Management, Emergency Response, Traffic and Safety Management, Dust and Noise Minimisation and Stakeholder Communication Plans.

Works should only be carried out once the method statements have been agreed with competent authorities such as NatureScot, Historic Environment Scotland and SEPA. At the project level it will not be sufficient to defer the production of construction method statements, these should be completed at the detailed design stage and may be subject to further Appropriate Assessment where potential impacts have been identified in the SEA Environmental Report and accompanying HRA Record for the SMP. Where there may be unavoidable impacts on protected habitats and / or species the necessary derogation licences should be applied for prior to seeking planning permission or approval for a scheme.

Marine construction and in-stream works, such as sea wall refurbishment, groynes or dredging have the greatest potential for negative impacts during spawning / breeding and early nursery periods for aquatic and marine protected species. No marine or in-stream works should occur during restricted periods for relevant species and consultation should be undertaken with the appropriate authorities in this regard.

Monitoring of project-level mitigation measures should be undertaken during and after works, to ensure effectiveness.

All works and planning of works should be undertaken with regard to all relevant legislation, licensing and consent requirements, and recommended best practice guidelines. An ecological clerk of works should be appointed for environmental management of each scheme, and where specific sensitive species may be impacted, an appropriate expert should also be appointed.

In areas of the coastline where the policy is to take no action and allow natural uninterrupted coastal processes, including erosion and accretion, to continue (NAI), there is potential for loss or damage to cultural heritage features or their settings from these processes. Owners of designated heritage assets should continue to monitor the risk to these assets, and follow advice provided by HES Managing Change in the Historic Environment Guidance Notes[1].

3.2.2 Mitigation by Environmental Effect

Table 3-3 demonstrates environmental effect-specific mitigation measures that should be adopted within the SMP to minimise the potential for any negative effects on the wider environment of implementing the preferred policies. These mitigation measures should be implemented and further developed at the detailed design and project-level study stages.

Table 3-3 Proposed Mitigation Measures

Effect	Proposed Mitigation
Temporary disturbance and destruction of existing habitats and flora, and the displacement of fauna, along the shoreline and river corridors.	Good planning and appropriate timing of works to minimise adverse effects. Where applicable, prior to any vegetation clearance an appropriately qualified ecologist should be contracted to undertake a 'pre-vegetation clearance' survey for signs of nesting birds and protected and important species e.g., otters, kingfisher etc. Should important species be found during surveys the sequential approach of avoid, reduce or mitigate should be adopted to prevent significant adverse effects following advice from appropriately qualified professionals. Vegetation and tree clearance should be minimised and only occur outside the main bird nesting season from February to August. Where there are over-wintering birds, to avoid disturbance, works should be avoided between September and March. Following construction, replanting and landscaping, or natural revegetating, should be undertaken in line with appropriate guidelines that aim to improve local biodiversity. This will provide medium- and long-term benefits to the biodiversity, flora and fauna of the working areas. Where possible, original sediment / soil should be reinstated to original levels to facilitate natural restoration and recolonisation of habitat. Consider integration of design as part of blue / green infrastructure plans and habitat enhancement where possible.
Temporary displacement of otters, birds, fish and other fauna during the construction period.	Good planning, appropriate timing of works and sensitive construction methods are essential. Adherence to best practice construction guidelines.
Adverse effects on European sites, habitats and species from construction or operation of shoreline management scheme.	Good planning and appropriate timing of works, and good construction and management practices will keep adverse effects to a minimum. There should be timely consultation with NatureScot. Site- and species-specific mitigation should be followed, as provided for in the HRA for the SMP, including requirements for site-specific surveys, timing of works etc. Provide local, connected, compensatory habitat if loss of area of European site is unavoidable.
Spread of invasive species during construction.	Pre-construction survey for invasive species. Effective cleaning of equipment and machinery along with strict management protocols to combat the spread of invasive species should be adopted. Preparation of invasive species management plan for construction and maintenance-related activities if invasive species are

[1] https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment-guidance-notes/

	recorded during the pre-construction surveys. Any imported materials will need to be free from alien invasive species. Post-construction survey for invasive species.
Dredging impacts on biodiversity, flora and fauna.	Minimise requirement for in-water works through good planning. Good dredging practices should be implemented, along with consultation with environmental bodies on methodology and appropriate timing to cause the least amount of damage, habitat loss, and sedimentation. Scoping or relevant specialist ecological surveys during the planning stage and prior to any construction works.
Construction disturbance to the local population.	Disturbances can be kept to a minimum with good working practices, planning and timing. Adoption of Construction Best Practice and measures identified in the CEMP and implementation of traffic and pedestrian management during construction.
Health and Safety risk to the local population during construction works.	Good construction management practices and planning of works. Adoption of Construction Best Practice and measures identified in the CEMP.
Loss of access to agricultural soil resource	Consultation and agreement with local landowners on detailed designs and residual impacts of coastal flooding. Potential for requirement for compensation.
Removal of soil and rock material via dredging and excavation works during construction.	Re-use material where possible on site for either embankments or landscaping.
Temporary disturbances of water quality during the construction phase.	Good management and planning to keep water quality disturbance to a minimum. Any potential water quality issues from construction should be contained and treated to ensure no damage to natural water bodies. Dredging and construction will have to be planned appropriately, using Best Available Techniques / Technology (BAT) at all times, to ensure water quality issues are kept to a minimum, with no significant adverse effects. Adherence to guidelines such as CIRIA Document C532 - Control of Water Pollution from Construction Sites. Development and consenting of environmental management plan prior to commencement of works.
Potential for pollution incidents during the construction phase.	Minimise requirement for in-water works through good planning. Strict management and regulation of construction activities. Provision of appropriate facilities in construction areas to help prevent pollution incidents. Preparation of emergency response plans. Good work practices including; channelling of discharges to settlement ponds, construction of silt traps, construction of cut-off ditches to prevent run-off from entering waterbodies, hydrocarbon interceptors installed at sensitive areas, appropriate storage of fuel, oils and chemicals, refuelling of plant and vehicles on impermeable surfaces away from drains / waterbodies, provision of spill kits, installation of wheel wash and plant washing facilities, implementation of measures to minimise waste and ensure correct handling, storage and disposal of waste and regular monitoring of surface water quality.
Potential requirement for maintenance dredging.	Design should aim to ensure WFD objectives are not compromised. All options to be subject to a WFD Assessment. Any negative effects on the status of a water body will only be permitted under the WFD if the strict conditions set out in WFD Article 4 are met. Adhering to good work practices including, diversion of discharges to settlement ponds; construction of silt traps; construction of cut-off ditches to prevent run-off from entering excavations; and granular materials placed over bare soils. If a channel is maintained on an as-required basis, using good planning, timing and BAT, there should be only minimal temporary disturbance to the local water quality.
Alterations to coastal processes.	Detailed surveys and hydrodynamic modelling to inform detailed design of coastal works to ensure no negative effects on coastal processes.
Disturbances to local infrastructure during the construction phase, e.g., traffic, water and electricity.	Good site management practices, traffic and construction management plans and consultation with the competent and statutory authorities prior to any works should enable all adverse effects to be kept to a minimum over a short timescale. Adoption of Construction Best Practice.

In the short-term construction period, there is the potential for damage to heritage features.	Where necessary a heritage impact assessment should be prepared in respect of any works to architectural or archaeological features to feed into detailed design. Consultation and agreement with Historic Environment Scotland in advance of any works taking place in respect of protected archaeological or architectural features. Construction supervision by qualified project archaeologists, combined with sensitive construction methods and restoration would mean this damage could be kept to a minimum. Heritage features damaged could be restored / preserved. Statutory consents and notices may be required prior to works taking place.
Medium- and long-term effects on the setting of heritage features.	Adverse effects could be kept to a minimum through sensitive design and planning. Planning and design advice from qualified archaeologists. Statutory consents may be required prior to works.
Potential for undiscovered heritage to be adversely affected during construction and dredging operations.	Interpretation of side-scan sonar and bathymetry information, along with supervision of construction and dredging operations by qualified archaeologists will minimise any adverse effects or the possibility of destruction of underwater and undiscovered heritage features in areas of heritage potential.
Extent and severity of short-term negative effects on landscape from construction.	Adverse effects could be kept to a minimum through good site practice and planning (e.g., screened laydown areas and traffic management). Adoption of Construction Best Practice.
Extent and severity of medium to long-term negative effects on landscape from preferred policies.	Adverse effects could be kept to a minimum through sensitive design and planning (e.g., vegetative screening and landscape management planning). Landscape and visual assessment and advice during detailed design. Public consultation on draft designs.
Restricted access to waterbodies for recreational activities due to preferred policies.	Sensitive design of the shoreline management measures. Potential to improve recreational access, safety of access and improve local recreational and ecological linkages considered in the detailed design. Public and stakeholder consultation on draft designs.
Disturbances to local amenity, community and social infrastructure during the construction phase, e.g., shops and amenity areas.	Good site management practices, traffic and construction management plans and consultation with the competent and statutory authorities prior to any works should enable all adverse effects to be kept to a minimum over a short timescale. Adoption of Construction Best Practice.

3.2.3 HRA mitigation

Where the potential for adverse effects on European site integrity cannot be excluded at this strategic plan level, the HRA Record has outlined mitigation to ensure the avoidance of adverse effects. This is shown in

Table 3-4. The mitigation provided is considered appropriate at this strategic plan level, as the details regarding required defence maintenance works, the scale or nature of potential alterations to existing defences and / or new defences are not known. The next stage of SMP implementation will be further study, and this will inform the nature of the policy implementation.

The plan-level mitigation outlined in

Table 3-4 states that any maintenance works, or coastal flood and erosion protection schemes, should be designed appropriately at the outset to avoid any direct losses, minimise the potential for damage to designated habitats, and avoid significant effects on European Sites. It stipulates that work areas should be minimised to avoid disturbance of habitats, and that best practice guidance should be followed during any maintenance or construction works in order to avoid the potential for pollution and the spread of invasive species.

Any projects that arise from the implementation of the policies identified in the SMP will themselves be required to conform with the regulatory provisions of Environmental Impact Assessment (EIA), Habitats Regulations Appraisal (HRA), Ecological Impact Assessment (EcIA), Consent under the Nature Conservation (Scotland) Act 2004, environmental risk assessments, and planning regulations / requirements, as appropriate. The Plan-level mitigation outlined includes the requirement for consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 (for SSSIs) and / or project-level HRA, which

should prescribe appropriate project-level mitigation measures, when specific details regarding the scale and nature of any works are known.

Table 3-4 Proposed Plan-Level HRA Mitigation Measures

Policy Unit	European Site	Proposed HRA Mitigation
PU 20: Primary HTL **PU 21: Localised HTL** **PU 22: Localised HTL** **PU 23: Localised HTL** **PU 24: Primary HTL** **PU 25: Primary HTL** **PU 26: Localised HTL**	Luce Bay and Sands SAC	The details regarding any maintenance works, alterations of existing defences or new defences are not known at this strategic plan stage. A HTL policy in these areas will be subject to further study. The following plan-level mitigation is proposed: Maintenance works / coastal flood and erosion protection schemes will be designed appropriately to avoid footprint losses, reduce any damage to dune / intertidal habitats, avoid potential for intertidal narrowing, and avoid significant effects on the SAC. Mitigation for works will include: - works area minimised and traffic routed to avoid sensitive dune habitats; - Best practice guidance followed to avoid pollution and the introduction of invasive species; - Any works should ensure that they do not interfere with natural coastal processes, including sediment transport; and - consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures e.g., dune / intertidal habitat surveys and monitoring, great-crested newt surveys and monitoring (if required) when specific details of the scale and nature of the maintenance works / coastal flood and erosion protection scheme are known. At project level, the potential for in-combination effects from implementation of SMP policies in other areas of the CPU should be examined, as well as other projects that could affect the coastal / intertidal habitats. The HRA should conclude 'no adverse effects' on-site integrity.
PU 15: Localised HTL	River Bladnoch SAC	The details regarding any maintenance works are not known at this strategic plan stage. A HTL policy in this area will be subject to further study. The following plan-level mitigation is proposed: Maintenance works will be designed appropriately to avoid significant effects on the SAC. Mitigation for works will include: - Best practice guidance followed to avoid pollution and the introduction of invasive species; and - consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures when specific details of the scale and nature of the maintenance works are known. The HRA should conclude 'no adverse effects' on-site integrity.
PU 1: Localised HTL **PU 2: Localised HTL** **PU 3: Localised HTL** **PU 4: Localised HTL** **PU 6: Primary HTL** **PU 7: Localised HTL** **PU 8: Localised HTL**	Solway Firth SAC	The details regarding any maintenance works, alterations of existing defences or new defences are not known at this strategic plan stage. A HTL policy in these areas will be subject to further study. The following plan-level mitigation is proposed: Maintenance works / coastal flood and erosion protection schemes will be designed appropriately to avoid footprint losses, reduce any damage to coastal / intertidal habitats, avoid potential for intertidal narrowing, and avoid significant effects on the SAC. Mitigation for works will include: - works area minimised and traffic routed to avoid sensitive coastal habitats; - Best practice guidance followed to avoid pollution and the introduction of invasive species; - Any works should ensure that they do not interfere with natural coastal processes, including sediment transport; and

Policy Unit	European Site	Proposed HRA Mitigation
		- consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures including coastal / intertidal habitat survey and monitoring (if required) when specific details of the scale and nature of the maintenance works / coastal flood and erosion protection scheme are known. At project level, the potential for in-combination effects from implementation of SMP policies in other areas of the CPU should be examined, as well as other projects that could affect the coastal / intertidal habitats. The HRA should conclude 'no adverse effects' on-site integrity.
PU 30: Localised HTL **PU 31: Localised HTL** **PU 32: Primary HTL** **PU 33: Primary HTL short-term, MR medium to long-term** **PU 34: Primary HTL**	Glen App and Galloway Moors SPA	The details regarding any re-routing of the A77, maintenance works, alterations of existing defences or new defences are not known at this strategic plan stage. A HTL or MR policy in these areas will be subject to further study. The following plan-level mitigation is proposed: Any scheme to re-route the A77 road will be designed appropriately to avoid footprint losses and identify and reduce any damage to suitable / sensitive habitat used by this species and avoid significant effects on the SPA. Mitigation for works arising from implementation of MR and HTL policies will include: - consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures including timing of works to avoid periods of key bird usage in the identified locations, bird surveys / monitoring (if required) when specific details of the scale and nature of the works are known. At project level, the potential for in-combination effects from implementation of SMP policies in other areas of the CPU should be examined, as well as other projects that could affect the intertidal habitats. The HRA should conclude 'no adverse effects' on-site integrity.
PU 20: Primary HTL **PU 21: Localised HTL** **PU 22: Localised HTL** **PU 23: Localised HTL**	Loch of Inch and Torrs Warren SPA / Ramsar	The details regarding any maintenance works, alterations of existing defences or new defences are not known at this strategic plan stage. A HTL policy in these areas will be subject to further study. The following plan-level mitigation is proposed: Maintenance works / coastal flood and erosion protection schemes will be designed appropriately to avoid footprint losses, identify and avoid any damage to suitable / sensitive habitat used by these species, avoid potential for intertidal narrowing and avoid significant effects on the SPA. Mitigation for works will include: - works area minimised; - Best practice guidance followed to avoid pollution and the introduction of invasive species; - Any works should ensure that they do not interfere with natural coastal processes, including sediment transport; and - consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures including timing of works to avoid periods of key bird usage in the identified locations, bird surveys / monitoring (if required) when specific details of the scale and nature of the maintenance works / coastal flood and erosion protection scheme are known. At project level, the potential for in-combination effects from implementation of SMP policies in other areas of the CPU should be examined, as well as other projects that could affect the intertidal habitats. The HRA should conclude 'no adverse effects' on-site integrity.
PU 9: Localised HTL **PU 13: Localised HTL**	Loch Ken and River Dee Marshes SPA / Ramsar	The details regarding any maintenance works, alterations of existing defences or new defences are not known at this strategic plan stage. A HTL policy in these areas will be subject to further study. Following the precautionary principle, the following plan-level mitigation is proposed: - consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures including timing of works to avoid periods

Policy Unit	European Site	Proposed HRA Mitigation
		of key bird usage in the identified locations, bird surveys / monitoring (if required) when specific details of the scale and nature of the maintenance works / coastal flood and erosion protection scheme are known. The HRA should conclude 'no adverse effects'.
PU 1: Localised HTL **PU 2: Localised HTL** **PU 3: Localised HTL** **PU 4: Localised HTL** **PU 6: Primary HTL** **PU 7: Localised HTL** **PU 8: Localised HTL** **PU 9: Localised HTL** **PU 10: Localised HTL** **PU 12: Localised HTL** **PU 13: Localised HTL** **PU 14: Localised HTL** **PU 15: Localised HTL** **PU 16: Primary HTL** **PU 17: Localised HTL** **PU 18: Primary HTL**	Solway Firth SPA / Upper Solway Flats and Marshes Ramsar	The details regarding any maintenance works, alterations of existing defences or new defences are not known at this strategic plan stage. A HTL policy in these areas will be subject to further study. The following plan-level mitigation is proposed: Maintenance works / coastal flood and erosion protection schemes will be designed appropriately to avoid footprint losses, identify and avoid any damage to suitable / sensitive habitats used by the species, avoid potential for intertidal narrowing and avoid significant effects on the SPA. Mitigation for works will include: - works area minimised; - Best practice guidance followed to avoid pollution and the introduction of invasive species; - Any works should ensure that they do not interfere with natural coastal processes, including sediment transport; and - consultation with NatureScot to confirm the need for consent under the Nature Conservation (Scotland) Act 2004 and / or HRA which will prescribe project-level mitigation measures including timing of works to avoid periods of key bird usage in the identified locations, bird surveys / monitoring (if required) when specific details of the scale and nature of the maintenance works / coastal flood and erosion protection scheme are known. At project level, the potential for in-combination effects from implementation of SMP policies in other areas of the CPU should be examined, as well as other projects that could affect the supporting habitats. The HRA should conclude 'no adverse effects' on-site integrity.

4 HOW CONSULTATIONS HAVE BEEN TAKEN INTO ACCOUNT IN THE PLAN

4.1 Introduction

Throughout the development of the SMP, stakeholder engagement has been undertaken at key points in the process. Consultation regarding the SEA Screening and Scoping reports, as well as engagement with Key Stakeholders during the development of the SMP, is discussed in **Section 2** of this SEA Statement. The Environmental Assessment (Scotland) Act requires the SEA Statement to summarise how consultations in response to the invitations mentioned in Section 16 (public consultation) and the results of any relevant consultation under Regulation 14 of the Environmental Assessment of Plans and Programmes Regulations 2004 (transboundary consultation) have been taken into account in the Plan. This Section summarises key points regarding these consultations, and how they were addressed during the SEA process and preparation of the final SMP.

4.2 Public consultation on the draft SMP and associated SEA Environmental Report and HRA Record

Section 16 of the Environmental Assessment (Scotland) Act 2005 requires that environmental authorities and the public must be given an opportunity to make submissions on a draft Plan and accompanying SEA Environmental Report prior to any final decision regarding the Plan.

Dumfries and Galloway Council engaged in public consultation on the draft SMP, including the SEA Environmental Report and HRA Record, over a three-month period from 17th June until 16th September 2022. Public consultation comprised the following:

- The consultation documentation was sent to environmental consultees and Key Stakeholders.
- A notice was published on 17th June 2022 in the DG Standard, and on 22nd June in the Stranraer and Wigtown Free Press.
- Information was made available on the Dumfries and Galloway Council website. Consultees were invited to respond to the consultation via email to smps@dumgal.gov.uk or in writing to: Dumfries and Galloway Council, Flood Risk Management Team Cargen Tower, Garroch Business Centre, Cargenbridge Dumfries, DG2 8PN. The consultation and related SEA and HRA reports remain available on the Dumfries and Galloway Council website at: https://www.dumgal.gov.uk/SMP.
- A hard copy of the consultation material was available to view at four Council buildings that were open to the public – Council Headquarters (Dumfries), Town Hall (Annan), Daar Road Offices (Kirkcudbright) and Ashwood House (Stranraer).

The consultation invited responses and comments from stakeholders on the SMP and associated SEA Environmental Report and HRA Record. During the public consultation period, a total of eight responses were received. Of the responses received, two were from private individuals, while six were from representative bodies, as follows:

- NatureScot
- Natural England
- Historic Environment Scotland
- The Coal Authority
- Defence Infrastructure Organisation
- Transport Scotland

4.3 Consultation regarding transboundary environmental effects

Section 17 (c) of the Environmental Assessment (Scotland) Act requires that, in the preparation of a Plan, account should be taken of the outcome of any relevant consultation under Regulation 14 of the Environmental Assessment of Plans and Programmes Regulations 2004.

The SEA Screening report concluded that Dumfries and Galloway Council would complete an SEA of the draft SMP. Owing to the potential for transboundary effects on the environment to arise from implementation of the draft SMP, the statutory transboundary consultee Natural England was provided with the SEA Scoping Report in March 2020. Natural England provided a response to the SEA Scoping consultation, and recommendations were incorporated into the Environmental assessments.

An additional response was received from the transboundary consultee Natural England regarding the draft SMP, SEA Environmental Report and HRA Record during the Public Consultation stage. The consultee had no further comment to add regarding the SMP or environmental assessments at that stage.

4.4 How consultation feedback has influenced the final SMP

Feedback from stakeholder engagement at various stages through the development of the SMP, SEA and HRA informed the development and selection of management policies included in the draft SMP. All submissions relating to the draft SMP and associated SEA and HRA reports received during the public consultation period have been addressed as comprehensively as possible in the preparation of the final SMP.

4.4.1 Amendments to the Plan as a result of Public Consultation

The following changes have been made to the final SMP on foot of comments received from stakeholders during Public Consultation, as detailed in **Appendix A** of this SEA Statement:

- The draft SMP recommended a shoreline management policy of Hold the Line for PU2 based on the precautionary principle due to the unquantified potential for contaminated ground to be at risk as a consequence of historic military use of significant areas of the frontage. However, information received from the owners of this site (Defence Infrastructure Organisation) in response to the consultation on the draft SMP confirmed that investigations had identified the risk of contamination to be low. Consequently, the preferred policy was changed in the final SMP to one of localised Hold the Line in combination with Managed Realignment and possibly No Active Intervention, as this was considered a more sustainable policy.
- In response to a recommendation by NatureScot, text has been updated in the final SMP to clarify that both Hold the Line and No Active Intervention are Preferred Policies for different parts of PU4 and other policy units.
- In response to a comment by Historic Environment Scotland (HES), reference to HES has been replaced with 'Asset Owner' throughout all documents, to clarify that HES is not the sole party responsible for monitoring the effects of the SMP on cultural heritage.

4.4.2 Amendments to the Environmental Reports as a result of Public Consultation

During public consultation, in addition to responding to the draft SMP, consultees were invited to respond to the SEA Environmental Report and HRA Record. Responses to the environment reports were received from the following environmental consultees:

- NatureScot
- Natural England
- Historic Environment Scotland

NatureScot and Natural England had no queries or issues to raise in relation to the SEA Environmental Report or HRA Record.

Comments were received from HES regarding the SEA Environmental Report, these comments, and how they have been responded to, are detailed in **Appendix A** of this SEA Statement. Several minor amendments or additions were included in the SEA Environmental Report, as follows:

- Historic Environment Scotland Reporting is included as a data source for SEA monitoring of cultural, architectural and archaeological heritage (Table 7.3). This has been expanded to include the example of condition reports for scheduled monuments.
- The guidance document 'Our Guide to Climate Change Impacts (2019)' has been referenced in Section 7.1 Mitigation.
- Text has been added to Section 7.2 to clarify the responsibilities for monitoring. SEA monitoring will report the positive and negative effects on the environment of implementing the SMP. However, management and monitoring of the condition of assets, as well as the risk to assets from future coastal flooding and erosion, will remain the responsibility of individual asset owners as detailed in Section 5.3 of the SMP.

In addition, the assessment for PU2 was reviewed in light of the amendment to the final SMP policy following information received from the Defence Infrastructure Organisation (see Section 4.4.1 above). Managed Realignment had already been assessed as an alternative policy for PU2 in the medium to long term. The final SMP included a minor amendment to include Managed Realignment (or possibly No Active Intervention) along with localised Hold the Line over all epochs. Text has been added to the assessment in Section 6.1 of the SEA Environmental Report to clarify the potential for positive effects from Managed Realignment within this PU provided there is no risk of contamination. Text has also been updated in the HRA Record from a preferred primary policy to a localised policy of Hold the Line for PU 2. These additional text changes are for clarification only and do not alter the outcome of the assessments.

It was considered that no other amendments or additions were necessary to the SEA Environmental Report or HRA Record on foot of comments received during public consultation, as detailed in **Appendix A** of this SEA Statement.

5 REASONS FOR CHOOSING THE PLAN IN LIGHT OF OTHER REASONABLE ALTERNATIVES

5.1 Introduction

The SEA process must include an evaluation of the likely environmental consequences of a range of alternative scenarios. The purpose of this section is to outline the reasons for choosing the SMP, as adopted, in light of other reasonable alternatives considered.

5.2 Consideration of alternative policies during SMP development

The methodology for development and selection of a preferred policy for each Policy Unit in the SMP was outlined in Section 2.4 of the SEA Environmental Report. The policies employed by the SMP to meet its objectives were dependent upon the issues identified at various locations along the Dumfries and Galloway coastline. Such issues include the risk of coastal flooding or erosion to people, property, and infrastructure, along with the existing and proposed development pressures and sensitivities along the coastline. The four generic policy options available to the SMP are summarised in **Table 5-1**.

Table 5-1 Summary of Generic SMP Policy Options

Policy	Description
Advance the Line (ATL)	The shoreline is advanced, defences are built seawards of the existing defence line or land is reclaimed for development. This policy will require active management and construction.
Hold the Line (HTL)	The shoreline is proposed to be held in its contemporary position. This policy is likely to require active management and construction.
Managed Realignment (MR)	This policy allows the shoreline to move backwards or forwards, with management to control or limit movement such as building new defences on the landward side of the original defences.
No Active Intervention (NAI)	No action is taken and natural uninterrupted coastal processes, including erosion and accretion, continue.

As there could be a need for more than one policy within a Coastal Process Unit, as well as several asset owners or administrative boundaries within each, these were divided into smaller discrete areas called Policy Units (PUs)**.** Each PU was assigned its own policy or combination of policies for future management of the shoreline.

For each PU, an assessment was carried out to identify receptors and assets at risk of coastal flooding and erosion. Selection of Preferred Policies for each PU, from the options described in **Table 5-1**, was carried out by means of a four-stage process:

Stage 1

- Identify the coastal flood and erosion risk, and the constraints and opportunities within each PU.

Stage 2

- Review each policy for technical issues, if a potential policy is not technically viable, then consider another policy;
- Review likely economic justification for policy, if not considered potentially economically viable identify another policy;
- Identify environmental issues associated with each viable policy, quantify the scale of impacts; and
- Identify potential social issues associated with each viable policy.

Stage 3

- Identify the preferred policies and possible alternative policies over the short, medium and long term, to determine the most sustainable approach.

Stage 4

- Stakeholder and public engagement and review of the draft preferred policies.

This process therefore involved an assessment of the likely environmental issues associated with each viable policy, and the scale of potential impacts, as well as the potential for social issues arising from implementing these policies. The preferred policy approaches were those which had the best environmental outcomes, unless these were considered technically unfeasible or would lead to significant social effects. Where a preferred policy was selected to avoid significant adverse effects on social grounds, consideration was given to implementing a preferred environmental policy (such as Managed Realignment) in a later epoch, giving time for the population in this area to adjust to coastal change, and for later options to be more fully investigated. Alternative primary or localised policies for Policy Units were identified during this process, providing either a more socially, or a more environmentally beneficial alternative to the preferred policy, or altering the epoch during which a policy would be applied. Stakeholder and public consultation on the preferred policies for the SMP was undertaken, and these were reviewed and refined, where necessary.

5.3 Alternative scenarios assessed in the SEA Environmental Report

Following the policy development process outlined in Section 5.2, preferred and alternative policies were selected for each PU, as detailed in Section 6 of the SEA Environmental Report.

The assessment of SMP policies for each CPU in Section 6 of the SEA Environmental Report included a high-level assessment of the likely effects of implementing these alternative policies for each SEA receptor. It also included a high-level assessment of the likely effects on these receptors of continuing to implement the policies of the existing SMP, i.e., the alternative ‘Do-Nothing’ scenario.

6 MEASURES TO MONITOR SIGNIFICANT ENVIRONMENTAL EFFECTS OF IMPLEMENTING THE PLAN

6.1 Monitoring

The SEA Regulations require that significant environmental effects arising from implementation of the SMP are monitored in order to identify, at an early stage, any unforeseen adverse effects, thus enabling appropriate remedial action to be undertaken. A recommended environmental monitoring programme is provided in Section 7.2 of the SEA Environmental Report. Proposed monitoring indicators and potential data sources are given in **Table 6-1** below, based on the Targets and Indicators established in the SEOs (discussed in Section 3.1.1). This proposed monitoring has been incorporated into Section 6 of the SMP and will be undertaken during the feasibility, design and construction phases of any resulting works. This monitoring will report the positive and negative effects on the environment of implementing the SMP, enabling early mitigation for any unwanted adverse effects and improving future iterations of the SMP.

Detailed monitoring for specific proposed policies should be re-scoped in consultation with the appropriate authorities at the detailed feasibility and design stages. This agreed detailed monitoring should then be undertaken before, during and after construction, where and when appropriate.

It should be noted that monitoring of the condition of assets, as well as the risk to assets from future coastal flooding and erosion, will remain the responsibility of individual asset owners as detailed in Section 5 of the SMP.

Table 6-1 Proposed Environmental Monitoring of the SMP

Criteria	Objective		Sub-Objective		Indicators	Proposed Data Sources
Biodiversity, Flora & Fauna	**1**	Avoid damage to, and where possible enhance, the biodiversity, flora and fauna in the vicinity of the shoreline.	**A**	Avoid detrimental effects to, and where possible enhance, International and European designations for protected species and their key habitats.	Area and condition of SAC, SPA, and Ramsar designation. Numbers of protected species.	NatureScot & Marine Scotland reporting and action plans.
			B	Avoid damage to or loss of, and where possible enhance, national and local nature conservation sites and protected species, or other known species of conservation concern such as priority marine features.	Area and condition of SSSI, LNR, MCA, MPA and local conservation designations. Numbers of protected species.	NatureScot & Marine Scotland reporting and action plans. Dumfries & Galloway Council – Local Development Plans.
Population & Human Health	**2**	Protect the public from risk of coastal flooding and erosion and avoid significant social effects on the population.	**A**	Protect the public from risk of coastal flooding and erosion.	Population at risk from coastal flooding and erosion.	SEPA reporting. Dumfries & Galloway Council – Flood Risk Management Plans. Scotland Census Data.
			B	Avoid significant negative social effects on the public.	Population displaced by coastal flooding and erosion.	Scotland Census Data. SMP Data.
Geology, Soils & Land use	**3**	Avoid damage to, and where possible enhance, areas of geological importance and existing functional soil and land resource.	**A**	Maintain or improve areas of existing functional soil and land resource.	Areas of functional soil and land resource at risk from coastal flooding and erosion.	NatureScot erosion reporting. NatureScot landcover mapping. Dumfries & Galloway Council – land use zoning in Local Development Plans.
			B	Avoid damage to or loss of, and where possible enhance, national geological conservation sites.	Areas of Geological SSSI.	NatureScot reporting.
Water	**4**	Protect and enhance the state of the water environment.	**A**	Protect and enhance the state of the water environment.	Coastal morphology and waterbody status.	SEPA – River Basin Management Plans / WFD reporting.
Climatic Factors	**5**	Adaptation to potential climatic change.	**A**	Adaptation of shoreline management to potential climatic change.	Interaction with potential climate change influenced flood extents / wave overtopping and severe weather events.	SEPA reporting. Dumfries & Galloway Council – Flood Risk Management Plans.

Criteria	Objective		Sub-Objective		Indicators	Proposed Data Sources
Material Assets & Infrastructure	**6**	Protect material assets and infrastructure from risk of coastal flooding and erosion.	**A**	Protect material assets and infrastructure from risk of coastal flooding and erosion.	Material assets and infrastructure at risk from coastal flooding and erosion.	SEPA reporting. Transport Scotland. Scottish Water. Dumfries & Galloway Council reporting.
Cultural, Architectural & Archaeological Heritage	**7**	Protect or, where appropriate, enhance historic environment features and their settings.	**A**	Avoid loss of, or damage to, heritage features.	International, National and local designated heritage structures, sites and monuments.	Dumfries & Galloway Council reporting. Historic Environment Scotland reporting, including Field Officer condition reports for Scheduled Monuments. Canmore Database.
			B	Minimise effects on the setting of heritage features.		
Landscape & Visual Amenity	**8**	Protect, and where possible enhance, the landscape and seascape character and visual amenity of the Dumfries & Galloway shoreline.	**A**	Protect, and where possible enhance, the landscape and seascape character and visual amenity of the Dumfries & Galloway shoreline.	Landscape character assessments. Seascape assessments. Designated landscapes and views, such as NSAs	Dumfries & Galloway Council – Local Development Plans. NatureScot landcover mapping.

Appendix A Summary of Public Consultation Responses and Actions Taken

Respondent	Comment	Response
NatureScot	We have provided detailed input to the SMP through earlier consultations, as noted in the 'Post Public Engagement Site Specific Comments' for each Policy Unit in Appendix D. Recognising that the SMP forms high-level policy, with local detail to be established through action planning, development planning etc, we look forward to future opportunities to further engage with coastal management in D&G, particularly where there may be implications for designated nature conservation sites.	Comment noted.
	We have one specific comment, concerning Policy Unit 4. Our coastal change adviser Nick Everett discussed this informally with Katia Rajovic of D&GC and Malcolm Brian of the consultants RPS on 7 September. For the coast east of Powfoot, Fig 4.2 in Appendix D shows a Preferred Policy of No Active Intervention (NAI) for all epochs, only changing to Hold The Line (HTL) at Newbie Mains Farm. This is supported by text on p34 – 'a localised HTL policy… elsewhere NAI'. We welcome this, in line with specific nature conservation advice in our consultation response of 20 April 2021. However, text on p35 states that HTL "should be applied …where assets are at risk" (second para), that the Preferred Policy is HTL and that NAI "is considered… in areas with low risk" (last para). As there is at least one property between Powfoot and Newbie Mains that has clear erosion risk, this text appears to contradict Fig 4.2, which could lead to confusion or inappropriate actions in future. We recommend these sections of text should be amended to state simply that both HTL and NAI are Preferred Policies, for different parts of PU4.	Text has been updated to state simply that both HTL and NAI are Preferred Policies for different parts of PU4.
Natural England	Natural England has no comments to make on the Draft SMP, SEA and HRA. The lack of comment from Natural England should not be interpreted as a statement that there are no impacts on the natural environment. Other bodies and individuals may wish to make comments that might help the Local Planning Authority (LPA) to fully take account of any environmental risks and opportunities relating to this document.	Comment noted.
	Should the proposal be amended in a way which significantly affects its impact on the natural environment, then in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, please consult Natural England again.	Comment noted.
Historic Environment Scotland	We welcome where the draft Dumfries and Galloway Shoreline Management Plan (SMP) offers an updated and in-depth understanding of the risks associated with coastal processes in the Dumfries and Galloway Area. We understand that the SMP has used this understanding to develop new policy approaches for the management of these risks and, also, to identify actions for their implementation.	Comment noted.
	We note that the SMP recommends a policy of 'No Active Intervention' across most of the Dumfries and Galloway shoreline. 'Hold the Line' policies are mainly recommended for the settlement areas within Coastal Policy Unit 1 (Inner Solway	Comment noted.

Respondent	Comment	Response
	Firth) and Coastal Policy Unit 6 (Loch Ryan) and other localised areas across the SMP area. It is also noted that, due to anticipated future sea level rise, 'Hold the Line' will become increasingly unsustainable and that an alternative policy of 'Managed Realignment' is proposed for the medium-longer term. While we are broadly content to agree with these policy approaches, we nevertheless understand that they will bring with them pronounced challenges and opportunities for the historic environment. A policy of 'No Active Intervention', for example, is likely to result in a continued risk to the historic environment caused by coastal flooding and / or erosion in the short term. In the medium to long term, this risk is likely to increase due to the anticipated effects of climate change. Similarly, a policy of 'Hold the Line' may lead to impacts on heritage assets and their settings as flood defence measures are maintained and adapted to accommodate increased coastal flooding and erosion risks. A policy of 'Hold the Line' also may not provide sufficient adaptation or protection to cultural heritage assets as the risk of coastal flooding and erosion increases. We therefore welcome where we have been engaged on the development of the SMP and have been made aware of the policy approaches and actions proposed. We also welcome the wider commitment to awareness-raising included within the SMP Action Plan.	
	Given the challenges noted above, it is important that a robust monitoring programme is included within the Action Plan. This is so that the risks to cultural heritage assets are identified and responded to appropriately. We note that HES has been identified as the sole party responsible for monitoring the effects of the SMP on cultural heritage within the table at Section 5.3. Here, it should be noted that it is the responsibility of Dumfries and Galloway Council as the Responsible Authority to monitor any significant effects on heritage assets stemming from the implementation of the plan. We therefore recommend that the table at Section 5.3 should be updated to reflect this. We would also wish to see clarity on the proposed approach to monitoring presented in the SEA Post-Adoption Statement for the SMP	Reference to HES replaced with 'Asset Owner' throughout all documents.
	In relation to scheduled monuments, Historic Environment Scotland's Field Officers generate condition reports for scheduled monuments through visits at least every five years. This condition information can be supplied to the council on request to supplement the monitoring programme for the historic environment.	Historic Environment Scotland Reporting is included as a data source for SEA monitoring of cultural, architectural and archaeological heritage (Table 7.3 of the SEA Environmental Report). This has been expanded to include the example of condition reports for scheduled monuments.
	We note that the SEA Environmental Report has been produced to assess the potential environmental effects caused by the shoreline management policies put forward within the plan and, also, to provide environmental guidance to produce a more sustainable plan. In line with this, we welcome where the Strategic Environmental Assessment (SEA) has informed the development of the policy approaches within the SMP.	Comment noted.

Respondent	Comment	Response
	The Environmental Report concludes that heritage assets are at risk from coastal flooding and erosion, the extent and rate of which is projected to increase with climate change. While we are content to agree with this overall conclusion, we consider that the assessments for each Coastal Process Unit are difficult to interpret and it is difficult to identify where significant effects on individual heritage assets are likely to occur. We nevertheless welcome the generalised assessment of the different SMP policy approaches included at Table 6-2 and consider this forms a helpful basis for the mitigation options included at Chapter 7 (Mitigation and Monitoring) of the Environmental Report. We have included our detailed comments on the Environmental Report in the attached Annex	The level of information in the SEA Environmental Report regarding the significant risks to heritage assets is considered appropriate and in line with the level of information included for other asset types.
	The baseline summary of pressures and issues affecting cultural heritage assets in the area at Table 3-2 is very clear.	Comment noted.
	The study of environmental characteristics for the plan area at Section 3 includes an overview of the cultural heritage topic area. The information included here is relatively high-level and could benefit from a consideration of the spatial distribution of heritage assets across the plan area. Some analysis of the cultural significance of the different heritage assets discussed would also have been helpful.	The level of information in the SEA Environmental Report is considered appropriate and in line with the level of information included for other asset types.
	We note that paragraph 3.2.7.2 includes some analysis of those heritage assets at risk from coastal flooding or erosion. This specifies that some heritage assets within Coastal Policy Units 4, 6, 16, 18, 27, 28 and 32 have been identified to be at coastal flood and/or erosion risk. Here, it would have been beneficial if these heritage assets were identified and, also, if some analysis of these risks had been provided. We note that the Arbigland Inventory Designed Landscape (GDL15) is identified as one of 13 heritage assets potentially affected by coastal erosion. While we welcome the identification of this asset, it would have been useful if this list were expanded upon.	The level of information in the SEA Environmental Report regarding the significant risks to heritage assets is considered appropriate and in line with the level of information included for other asset types.
	We are generally content with the high-level summary of existing pressures and issues for cultural heritage in the SMP area presented at paragraph 3.2.7.3	Comment noted.
	We note that the options for each Coastal Policy Unit Area have been assessed against the objective to 'protect or, where appropriate, enhance historic environment features and their settings' and welcome this. We note that the minimum requirement for meeting this objective has been to ensure 'no loss or damage to heritage features, or their settings, from the construction or operation of proposed measures'. An aspirational target of 'increased protection/preservation for heritage features and/or improvement of their settings' is also identified. Here, we are unsure why the minimum requirement does not consider no damage to or loss of cultural heritage features caused by coastal flooding or erosion.	The objective to 'protect or, where appropriate, enhance historic environment features and their settings' was established as an SEA objective, to aid in the assessment of potential effects of the SMP on the cultural heritage topic. It differs from the SMP objective to protect people and property in the SMP area.
	We consider that the broad assessment of the different SMP policy approaches against the cultural heritage objective included at Table 6-2 is extremely helpful. This	Comment noted.

Respondent	Comment	Response
	assessment allows for a general understanding of the positive and negative effects generated by different policy approaches without too much complication. We agree with the findings presented here for each policy approach.	
	The reporting of environmental effects for the different policy approaches to be applied across each Coastal Process Unit is, however, difficult to interpret. This is because the assessment findings for several policy units have been merged into a single table. This means that individual heritage assets, or groups of heritage assets, are not clearly identified and it is difficult to establish exactly where significant effects are likely to occur. As a possible result of this, we note that the 'key conclusions' section for each Coastal Process Unit often doesn't identify potentially significant effects for the cultural heritage topic area. This, in turn, may lead to the proposed mitigation and monitoring programme not being fully informed by the assessment findings.	The level of information in the SEA Environmental Report regarding the significant risks to heritage assets is considered appropriate and in line with the level of information included for other asset types.
	We welcome the proposal to mitigate any impacts on heritage assets caused by the construction and maintenance of physical shoreline management measures through detailed design at a project level. We recommend that the design of any such works should be informed by a heritage assessment where appropriate. We would welcome the opportunity to comment on feasibility studies, heritage assessments etc. where there are likely to be effects on sites within our statutory remit.	Noted. Table 7.1 (Proposed Mitigation Measures) of the SEA Environmental Report includes the following text "Where necessary a heritage impact assessment should be prepared in respect of any works to architectural or archaeological features to feed into detailed design. Consultation and agreement with Historic Environment Scotland in advance of any works taking place in respect of protected archaeological or architectural features".
	We note the acknowledgement at page 112 that where the policy is to take no action and allow natural uninterrupted coastal processes, including erosion and accretion, to continue there is a potential for loss or damage to cultural heritage assets or their settings. In line with this, we welcome the recommendation that owners should continue to monitor the risk to these assets and follow advice offered by HES. Our Guide to Climate Change Impacts (2019) may be helpful in this regard.	Comment acknowledged for future working. The suggested guidance document has been referred to on p.112 of the SEA Environmental Report.
	The proposed mitigation measures included at Table 7-1 are also welcome. We note that these also include proposals for reducing and avoiding impacts on the historic environment caused by the implementation of shoreline management measures through sensitive project design and planning. We welcome the proposal that suitably experienced heritage professionals should be involved in these processes. As above, we would welcome the opportunity to comment on feasibility studies, heritage assessments etc. where there are likely to be effects on sites within our statutory remit.	Comment acknowledged for future working.
	We note that any significant environmental effects resulting from the plan will be monitored. While we welcome this, we would wish to see some further clarity on the	Text has been added to Section 7.2 of the SEA Environmental Report to clarify the responsibilities for monitoring.

Respondent	Comment	Response
	approach to monitoring included within the SEA Post-Adoption Statement for the SMP.	SEA monitoring will report the positive and negative effects on the environment of implementing the SMP. However, management and monitoring of the condition of assets, as well as the risk to assets from future coastal flooding and erosion, will remain the responsibility of individual asset owners as detailed in Section 5 of the SMP.
The Coal Authority	Our records indicate that within the Dumfries and Galloway area there are recorded coal mining features present at surface and shallow depth including; mine entries, shallow coal workings, reported surface hazards, surface coal mining and mine gas sites. These recorded features may pose a potential risk to surface stability and public safety. The Coal Authority's records also indicate that surface coal resource is present in the area, although this should not be taken to imply that mineral extraction would be economically viable, technically feasible or environmentally acceptable. As you will be aware those authorities with responsibility for minerals planning and safeguarding will have identified where they consider minerals of national importance are present in your area and related policy considerations. As part of the planning process consideration should be given to such advice in respect of the indicated surface coal resource.	Comment acknowledged for future working.
	It is noted that this current consultation relates to a Supplementary Planning Document for a Shoreline Management Plan. I can confirm that the Planning team at the Coal Authority have no specific comments to make on this consultation document.	Comment noted.
Defence Infrastructure Organisation	The Ministry of Defence (MOD) currently own a large area of shoreline at Eastriggs which is located in CPU 1 Policy unit 2. The recommendations set out in the consultation is for a hold the line position in the short term and a hold the line/managed retreat in the medium to long term. We understand that this approach has been recommended on the basis that the site may be contaminated and therefore should be protected to stop any contaminants being released. DIO attach a non-technical note setting out a summary of the most recent Land Quality Assessment and remediation works relating to the Eastriggs MOD site.	The draft SMP recommended a shoreline management policy of Hold the Line for PU 2 based on the precautionary principle due to the unquantified potential for contaminated ground to be at risk as a consequence of historic military use of significant areas of the frontage. However, information received from the owners of this site in response to the consultation on the draft SMP confirmed that investigations had identified the risk of contamination to be low. Consequently, the preferred policy was changed in the final SMP to one of localised Hold the Line in combination with Managed Realignment and possibly No Active Intervention, as this was considered a more sustainable policy.
Transport Scotland	Having been involved in the latter engagement stages for the development of the draft, we are generally supportive of the draft Shoreline Management Plan and where possible will take it into consideration in the management and operation of the Trunk Road Network, where it interacts with the coast and within our wider climate change adaptation and resilience activities.	Comment noted.

Respondent	Comment	Response
	We note, as asset owners of the Trunk Road Network, that we may have some interaction within the Policy Units and actions around shoreline management. Any actions we take will be guided by our asset management and monitoring processes, priorities for the Trunk Road Network as a whole and our wider climate change adaptation and resilience work, whilst taking stakeholders priorities and plans into account.	Comment acknowledged for future working.
	Further, we are developing our approach to adaptation and resilience, which includes consideration of the latest climate change projections, impacts and risks, including coastal change/erosion. This will inform our interventions in this policy area and will likely feed into a number of the proposed actions within the SMP.	Comment acknowledged for future working.
Public Consultee 1	The report is comprehensive well researched and written and I welcome the findings and conclusions. In particular, for Luce Bay, I note the relevant parts for Sandhead beach (quotes from the SMP provided by the consultee).	Comment noted.
	Consultee has lived on Sandhead beach for almost 70 years. Over that time the coast south and west of Altain has been heavily eroded, to the extent of approximately 50-100m with the loss of a number of dwellings and farm buildings. East and North of the northernmost dwellings on S road, there has been a slight build-up, but for the southerly houses, there has been slight erosion. This is particularly troublesome in SE gales and a storm surge. This year it accounted for flooding into the football field, the village green and the gardens of the 4 most southerly houses. Those dwellings further north have for good reasons, been spared the grass cutting and benefit from marram grass and other vegetation.	Comment acknowledged for future working.
	There have been a few sightings of sand lizards, with common lizards, adders and slow worms rewarding the patient. Stone chats and skylarks abound. We are proposing a regeneration project to preserve and enhance the current natural environment and reduce the risk of foreshore erosion. We would welcome any advice or support on the best way forward rot pursue the objectives of coastal and wildlife protection.	Comment acknowledged for future working.
Public Consultee 2	Consultee would like to input their opinion on the above plan. They would say that maintaining what is already in place is the best way to continue. Also encouraging local people to take responsibility for their own coastline is important to the consultee. Consultee has recently moved to Port William and am very proud to live in a town which built its own harbour.	Comment noted.